\_\_\_\_\_\_

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: [year=2009; month=7; day=15; hr=14; min=12; sec=13; ms=530; ]

\_\_\_\_\_

## Validated By CRFValidator v 1.0.3

Application No: 10664423 Version No: 3.0

Input Set:

Output Set:

**Started:** 2009-07-09 17:05:22.145 **Finished:** 2009-07-09 17:05:28.283

**Elapsed:** 0 hr(s) 0 min(s) 6 sec(s) 138 ms

Total Warnings: 294
Total Errors: 0

No. of SeqIDs Defined: 411

Actual SeqID Count: 411

Err	or code	Error Descript	ion								
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(99)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(100)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(101)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(102)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(103)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(104)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(105)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(106)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(107)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(108)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(109)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(110)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(111)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(112)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(113)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(114)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(115)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(116)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(117)
W	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(118)

Input Set:

Output Set:

**Started:** 2009-07-09 17:05:22.145

Finished: 2009-07-09 17:05:28.283

**Elapsed:** 0 hr(s) 0 min(s) 6 sec(s) 138 ms

Total Warnings: 294

Total Errors: 0

No. of SeqIDs Defined: 411

Actual SeqID Count: 411

Error code Error Description

This error has occured more than 20 times, will not be displayed

## SEQUENCE LISTING

<110>	Roule	eau, Guy A.					
	Lafre	eniere, Rona	ald G.				
	Roche	efort, Danie	el				
<120>	LOCI	FOR IDIOPA	ATHIC GENERA	ALIZED EPILE	EPSY, MUTAT	ONS THEREOF	
	AND	METHOD USI	NG SAME TO A	ASSESS, DIA	GNOSE, PROGI	NOSE OR TREAT	EPILEPSY
<130>	GOUI	:023USD2					
<140>	1066	54423					
<141>	2003	3-09-17					
<150>	09/7	18,355					
<151>	2000	0-11-24					
<150>	60/1	67,623					
<151>	1999	9-11-26					
<160>	411						
<170>	Pate	entIn versio	on 3.1				
<210>	1						
<211>	8378	3					
<212>	DNA						
<213>	Homo	sapiens					
<400>	1						
tactgo	agag	gtctctggtg	catgtgtgta	tgtgtgcgtt	tgtgtgtgtt	tgtgtgtctg	60
							100
tgtgtt	ctgc	cccagtgaga	ctgcagccct	tgtaaatact	ttgacacctt	ttgcaagaag	120
					<b>.</b>		100
gaatet	gaac	aattgcaact	gaaggcacat	tgttateate	tegtetttgg	grgargergr	180
+ aa+ a-	a+ ~ a	2021002122	++++	2244244224	++ < >+ >+ < < >> < < >+ < < < >> < < < <	gaat aaat gg	240
LCCLCa	ictge	agatggataa	ttttcctttt	aaccaggaac	tteatatgea	gaaraaargg	240
+ + + -	+	at agagast a	29229499	agaaagaata	attatagaa	angangt an	300
taatta	laaat	grgcaggarg	acaagatgga	gcaaacagtg	ettgtaecae	caggacetga	300
cadett	caac	ttcttcacca	gagaatctct	tacaactatt	daaadacdca	ttacagaaga	360
cagece	caac	cccccaca	gagaacccc	egeggeeace	gaaagacgca	cegeagaaga	300
aaaggg	raaad	aatcccaaac	cagacaaaaa	agatgacgac	gaaaatggcc	caaagccaaa	420
aaagge	addag	datecedade	cagacaaaaa	agaegaegae	gaaaacggee	caaageeaaa	120
tagtga	actta	gaagetggaa	agaaccttcc	atttatttat	ggagacattc	ct.ccagagat	480
		gaageeggaa	agaaccccc	400040040	9949404000	cccagagac	
aatata	agag	cccctagaaa	acctggaccc	ctactatatc	aataagaaaa	cttttatagt	540
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5 5						
attgaa	itaaa	gggaaggca	tetteeggtt	cagtgccacc	tctaccctat	acattttaac	600
- 5		JJJ JJ	9 5 - 0	5 - 5	J <del>J</del> -		-
tccctt	caat	cctcttagga	aaatagctat	taagattttq	gtacattcat	tattcagcat	660
		2.3	-		_	-	
gctaat	tatg	tgcactattt	tgacaaactg	tgtgtttatg	acaatgagta	accctcctga	720
	_		-	-	= =	-	

ttggacaaag aatgtagaat acaccttcac aggaatatat acttttgaat cacttataaa 780

aattattgca aggggattct	gtttagaaga	ttttactttc	cttcgggatc	catggaactg	840
gctcgatttc actgtcatta	catttgcgta	cgtcacagag	tttgtggacc	tgggcaatgt	900
ctcggcattg agaacattca	gagttctccg	agcattgaag	acgatttcag	tcattccagg	960
cctgaaaacc attgtgggag	ccctgatcca	gtctgtgaag	aagctctcag	atgtaatgat	1020
cctgactgtg ttctgtctga	gcgtatttgc	tctaattggg	ctgcagctgt	tcatgggcaa	1080
cctgaggaat aaatgtatac	aatggcctcc	caccaatgct	tccttggagg	aacatagtat	1140
agaaaagaat ataactgtga	attataatgg	tacacttata	aatgaaactg	tctttgagtt	1200
tgactggaag tcatatattc	aagattcaag	atatcattat	ttcctggagg	gttttttaga	1260
tgcactacta tgtggaaata	gctctgatgc	aggccaatgt	ccagagggat	atatgtgtgt	1320
gaaagctggt agaaatccca	attatggcta	cacaagcttt	gataccttca	gttgggcttt	1380
tttgtccttg tttcgactaa	tgactcagga	cttctgggaa	aatctttatc	aactgacatt	1440
acgtgctgct gggaaaacgt	acatgatatt	ttttgtattg	gtcattttct	tgggctcatt	1500
ctacctaata aatttgatcc	tggctgtggt	ggccatggcc	tacgaggaac	agaatcaggc	1560
caccttggaa gaagcagaac	agaaagaggc	cgaatttcag	cagatgattg	aacagcttaa	1620
aaagcaacag gaggcagctc	agcaggcagc	aacggcaact	gcctcagaac	attccagaga	1680
gcccagtgca gcaggcaggc	tctcagacag	ctcatctgaa	gcctctaagt	tgagttccaa	1740
gagtgctaag gaaagaagaa	atcggaggaa	gaaaagaaaa	cagaaagagc	agtctggtgg	1800
ggaagagaaa gatgaggatg	aattccaaaa	atctgaatct	gaggacagca	tcaggaggaa	1860
aggttttcgc ttctccattg	aagggaaccg	attgacatat	gaaaagaggt	actcctcccc	1920
acaccagtct ttgttgagca	tccgtggctc	cctattttca	ccaaggcgaa	atagcagaac	1980
aagccttttc agctttagag	ggcgagcaaa	ggatgtggga	tctgagaacg	acttcgcaga	2040
tgatgagcac agcacctttg	aggataacga	gagccgtaga	gattccttgt	ttgtgccccg	2100
acgacacgga gagagacgca	acagcaacct	gagtcagacc	agtaggtcat	cccggatgct	2160
ggcagtgttt ccagcgaatg	ggaagatgca	cagcactgtg	gattgcaatg	gtgtggtttc	2220
cttggttggt ggaccttcag	ttcctacatc	gcctgttgga	cagcttctgc	cagaggtgat	2280
aatagataag ccagctactg	atgacaatgg	aacaaccact	gaaactgaaa	tgagaaagag	2340
aaggtcaagt tctttccacg	tttccatgga	ctttctagaa	gateetteee	aaaggcaacg	2400
agcaatgagt atagccagca	ttctaacaaa	tacagtagaa	gaacttgaag	aatccaggca	2460
gaaatgccca ccctgttggt	ataaattttc	caacatattc	ttaatctggg	actgttctcc	2520

atattggtta	aaagtgaaac	atgttgtcaa	cctggttgtg	atggacccat	ttgttgacct	2580
ggccatcacc	atctgtattg	tcttaaatac	tcttttcatg	gccatggagc	actatccaat	2640
gacggaccat	ttcaataatg	tgcttacagt	aggaaacttg	gttttcactg	ggatctttac	2700
agcagaaatg	tttctgaaaa	ttattgccat	ggatccttac	tattatttcc	aagaaggctg	2760
gaatatcttt	gacggtttta	ttgtgacgct	tagcctggta	gaacttggac	tcgccaatgt	2820
ggaaggatta	tctgttctcc	gttcatttcg	attgctgcga	gttttcaagt	tggcaaaatc	2880
ttggccaacg	ttaaatatgc	taataaagat	catcggcaat	tccgtggggg	ctctgggaaa	2940
tttaaccctc	gtcttggcca	tcatcgtctt	catttttgcc	gtggtcggca	tgcagctctt	3000
tggtaaaagc	tacaaagatt	gtgtctgcaa	gatcgccagt	gattgtcaac	teccaegetg	3060
gcacatgaat	gacttcttcc	actccttcct	gattgtgttc	cgcgtgctgt	gtggggagtg	3120
gatagagacc	atgtgggact	gtatggaggt	tgctggtcaa	gccatgtgcc	ttactgtctt	3180
catgatggtc	atggtgattg	gaaacctagt	ggtcctgaat	ctctttctgg	ccttgcttct	3240
gagctcattt	agtgcagaca	accttgcagc	cactgatgat	gataatgaaa	tgaataatct	3300
ccaaattgct	gtggatagga	tgcacaaagg	agtagcttat	gtgaaaagaa	aaatatatga	3360
atttattcaa	cagtccttca	ttaggaaaca	aaagatttta	gatgaaatta	aaccacttga	3420
tgatctaaac	aacaagaaag	acagttgtat	gtccaatcat	acagcagaaa	ttgggaaaga	3480
tcttgactat	cttaaagatg	taaatggaac	tacaagtggt	ataggaactg	gcagcagtgt	3540
tgaaaaatac	attattgatg	aaagtgatta	catgtcattc	ataaacaacc	ccagtcttac	3600
tgtgactgta	ccaattgctg	taggagaatc	tgactttgaa	aatttaaaca	cggaagactt	3660
tagtagtgaa	teggatetgg	aagaaagcaa	agagaaactg	aatgaaagca	gtagctcatc	3720
agaaggtagc	actgtggaca	teggegeace	tgtagaagaa	cagcccgtag	tggaacctga	3780
agaaactctt	gaaccagaag	cttgtttcac	tgaaggctgt	gtacaaagat	tcaagtgttg	3840
tcaaatcaat	gtggaagaag	gcagaggaaa	acaatggtgg	aacctgagaa	ggacgtgttt	3900
ccgaatagtt	gaacataact	ggtttgagac	cttcattgtt	ttcatgattc	teettagtag	3960
tggtgctcgg	catttgaaga	tatatatatt	gatcagcgaa	agacgattaa	gacgatgttg	4020
gaatatgctg	acaaggtttt	cacttacatt	ttcattctgg	aaatgcttct	aaaatgggtg	4080
gcatatggct	atcaaacata	tttcaccaat	gcctggtgtt	ggctggactt	cttaattgtt	4140
gatgtttcat	tggtcagttt	aacagcaaat	gccttgggtt	actcagaact	tggagccatc	4200

aaatctctca ggacactaag	agctctgaga	cctctaagag	ccttatctcg	atttgaaggg	4260
atgagggtgg ttgtgaatgc	ccttttagga	gcaattccat	ccatcatgaa	tgtgcttctg	4320
gtttgtctta tattctggct	aattttcagc	atcatgggcg	taaatttgtt	tgctggcaaa	4380
ttctaccact gtattaacac	cacaactggt	gacaggtttg	acatcgaaga	cgtgaataat	4440
catactgatt gcctaaaact	aatagaaaga	aatgagactg	ctcgatggaa	aaatgtgaaa	4500
gtaaactttg ataatgtagg	atttgggtat	ctctctttgc	ttcaagttgc	cacattcaaa	4560
ggatggatgg atataatgta	tgcagcagtt	gattccagaa	atgtggaact	ccagcctaag	4620
tatgaagaaa gtctgtacat	gtatctttac	tttgttattt	tcatcatctt	tgggtccttc	4680
ttcaccttga acctgtttat	tggtgtcatc	atagataatt	tcaaccagca	gaaaaagaag	4740
tttggaggtc aagacatctt	tatgacagaa	gaacagaaga	aatactataa	tgcaatgaaa	4800
aaattaggat cgaaaaaacc	gcaaaagcct	atacctcgac	caggaaacaa	atttcaagga	4860
atggtctttg acttcgtaac	cagacaagtt	tttgacataa	gcatcatgat	tctcatctgt	4920
cttaacatgg tcacaatgat	ggtggaaaca	gatgaccaga	gtgaatatgt	gactaccatt	4980
ttgtcacgca tcaatctggt	gttcattgtg	ctatttactg	gagagtgtgt	actgaaactc	5040
atctctctac gccattatta	ttttaccatt	ggatggaata	tttttgattt	tgtggttgtc	5100
attctctcca ttgtaggtat	gtttcttgcc	gagctgatag	aaaagtattt	cgtgtcccct	5160
accetgttce gagtgateeg	tcttgctagg	attggccgaa	tcctacgtct	gatcaaagga	5220
gcaaagggga teegeaeget	gctctttgct	ttgatgatgt	cccttcctgc	gttgtttaac	5280
ateggeetee tactetteet	agtcatgttc	atctacgcca	tctttgggat	gtccaacttt	5340
gcctatgtta agagggaagt	tgggatcgat	gacatgttca	actttgagac	ctttggcaac	5400
agcatgatct gcctattcca	aattacaacc	tctgctggct	gggatggatt	gctagcaccc	5460
atteteaaca gtaageeace	cgactgtgac	cctaataaag	ttaaccctgg	aagctcagtt	5520
aagggagact gtgggaaccc	atctgttgga	attttctttt	ttgtcagtta	catcatcata	5580
tccttcctgg ttgtggtgaa	catgtacatc	gcggtcatcc	tggagaactt	cagtgttgct	5640
actgaagaaa gtgcagagcc	tctgagtgag	gatgactttg	agatgttcta	tgaggtttgg	5700
gagaagtttg atcccgatgc	aactcagttc	atggaatttg	aaaaattatc	tcagtttgca	5760
gctgcgcttg aaccgcctct	caatctgcca	caaccaaaca	aactccagct	cattgccatg	5820
gatttgccca tggtgagtgg	tgaccggatc	cactgtcttg	atatcttatt	tgcttttaca	5880
aagcgggttc taggagagag	tggagagatg	gatgctctac	gaatacagat	ggaagagcga	5940

		3 3	3		3	
aaacaagagg	aagtatctgc	tgtcattatt	cagegtgett	acagacgcca	ccttttaaag	6060
cgaactgtaa	aacaagcttc	ctttacgtac	aataaaaaca	aaatcaaagg	tggggctaat	6120
cttcttataa	aagaagacat	gataattgac	agaataaatg	aaaactctat	tacagaaaaa	6180
actgatctga	ccatgtccac	tgcagcttgt	ccaccttcct	atgaccgggt	gacaaagcca	6240
attgtggaaa	aacatgagca	agaaggcaaa	gatgaaaaag	ccaaagggaa	ataaatgaaa	6300
ataaataaaa	ataattgggt	gacaaattgt	ttacagcctg	tgaaggtgat	gtatttttat	6360
caacaggact	cctttaggag	gtcaatgcca	aactgactgt	ttttacacaa	atctccttaa	6420
ggtcagtgcc	tacaataaga	cagtgacccc	ttgtcagcaa	actgtgactc	tgtgtaaagg	6480
ggagatgacc	ttgacaggag	gttactgttc	tcactaccag	ctgacactgc	tgaagataag	6540
atgcacaatg	gctagtcaga	ctgtagggac	cagtttcaag	gggtgcaaac	ctgtgatttt	6600
ggggttgttt	aacatgaaac	actttagtgt	agtaattgta	tccactgttt	gcatttcaac	6660
tgccacattt	gtcacatttt	tatggaatct	gttagtggat	tcatcttttt	gttaatccat	6720
gtgtttatta	tatgtgacta	tttttgtaaa	cgaagtttct	gttgagaaat	aggctaagga	6780
cctctataac	aggtatgcca	cctggggggt	atggcaacca	catggccctc	ccagctacac	6840
aaagtcgtgg	tttgcatgag	ggcatgctgc	acttagagat	catgcatgag	aaaaagtcac	6900
aagaaaaaca	aattcttaaa	tttcaccata	tttctgggag	gggtaattgg	gtgataagtg	6960
gaggtgcttt	gttgatcttg	ttttgcgaaa	tccagcccct	agaccaagta	gattatttgt	7020
gggtaggcca	gtaaatctta	gcaggtgcaa	acttcattca	aatgtttgga	gtcataaatg	7080
ttatgtttct	ttttgttgta	ttaaaaaaaa	aacctgaata	gtgaatattg	cccctcaccc	7140
tccaccgcca	gaagactgaa	ttgaccaaaa	ttactcttta	taaatttctg	ctttttcctg	7200
cactttgttt	agccatcttc	ggctctcagc	aaggttgaca	ctgtatatgt	taatgaaatg	7260
ctatttatta	tgtaaatagt	cattttaccc	tgtggtgcac	gtttgagcaa	acaaataatg	7320
acctaagcac	agtatttatt	gcatcaaata	tgtaccacaa	gaaatgtaga	gtgcaagctt	7380
tacacaggta	ataaaatgta	ttctgtacca	tttatagata	gtttggatgc	tatcaatgca	7440
tgtttatatt	accatgctgc	tgtatctggt	ttctctcact	gctcagaatc	tcatttatga	7500
gaaaccatat	gtcagtggta	aagtcaagga	aattgttcaa	cagatctcat	ttatttaagt	7560
cattaagcaa	tagtttgcag	cactttaaca	gctttttggt	tatttttaca	ttttaagtgg	7620

ttcatggctt ccaatccttc caaggtctcc tatcagccaa tcactactac tttaaaacga 6000

ataacatatg gtatatagcc	agactgtaca	gacatgttta	aaaaaacaca	ctgcttaacc	7680
tattaaatat gtgtttagaa	ttttataagc	aaatataaat	actgtaaaaa	gtcactttat	7740
tttatttttc agcattatgt	acataaatat	gaagaggaaa	ttatcttcag	gttgatatca	7800
caatcacttt tcttactttc	tgtccatagt	actttttcat	gaaagaaatt	tgctaaataa	7860
gacatgaaaa caagactggg	tagttgtaga	tttctgcttt	ttaaattaca	tttgctaatt	7920
ttagattatt tcacaatttt	aaggagcaaa	ataggttcac	gattcatatc	caaattatgc	7980
tttgcaattg gaaaagggtt	taaaatttta	tttatatttc	tggtagtacc	tgcactaact	8040
gaattgaagg tagtgcttat	gttatttttg	ttctttttt	ctgacttcgg	tttatgtttt	8100
catttctttg gagtaatgct	gctctagttg	ttctaaatag	aatgtgggct	tcataatttt	8160
tttttccaca aaaacagagt	agtcaactta	tatagtcaat	tacatcagga	cattttgtgt	8220
ttcttacaga agcaaaccat	aggctcctct	tttccttaaa	actacttaga	taaactgtat	8280
tcgtgaactg catgctggaa	aatgctacta	ttatgctaaa	taatgctaac	caacatttaa	8340
aatgtgcaaa actaataaag	attacatttt	ttatttta			8378

<210> 2

<211> 8378

<212> DNA

<213> Homo sapiens

## <400> 2

tactgcagag gtctctggtg catgtgtgta tgtgtgcgtt tgtgtgtgtt tgtgtgtctg 60 tgtgttctgc cccagtgaga ctgcagccct tgtaaatact ttgacacctt ttgcaagaag 120 gaatctgaac aattgcaact gaaggcacat tgttatcatc tcgtctttgg gtgatgctgt 180 tcctcactgc agatggataa ttttcctttt aatcaggaat ttcatatgca gaataaatgg 240 taattaaaat gtgcaggatg acaagatgga gcaaacagtg cttgtaccac caggacctga 300 360 cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca ttgcagaaga 420 aaaggcaaag aatcccaaac cagacaaaaa agatgacgac gaaaatggcc caaagccaaa tagtgacttg gaagctggaa agaaccttcc atttatttat ggagacattc ctccagagat 480 540 ggtgtcagag cccctggagg acctggaccc ctactatatc aataagaaaa cttttatagt attgaataaa gggaaggcca tcttccggtt cagtgccacc tctgccctgt acattttaac 600 tcccttcaat cctcttagga aaatagctat taagattttg gtacattcat tattcagcat 660 gctaattatg tgcactattt tgacaaactg tgtgtttatg acaatgagta accctcctga 720

ttggacaaag aatgtagaat	acaccttcac	aggaatatat	acttttgaat	cacttataaa	780
aattattgca aggggattct	gtttagaaga	ttttactttc	cttcgggatc	catggaactg	840
gctcgatttc actgtcatta	catttgcgtt	tgtaacagaa	tttgtaaacc	taggcaattt	900
ttcagctctt cgcactttca	gagtcttgag	agctttgaaa	actatttcgg	taattccagg	960
cctgaaaacc attgtgggag	r ccctgatcca	gtctgtgaag	aagctctcag	atgtaatgat	1020
cctgactgtg ttctgtctga	gcgtatttgc	tctaattggg	ctgcagctgt	tcatgggcaa	1080
cctgaggaat aaatgtatad	: aatggcctcc	caccaatgct	tccttggagg	aacatagtat	1140
agaaaagaat ataactgtga	attataatgg	tacacttata	aatgaaactg	tctttgagtt	1200
tgactggaag tcatatatto	: aagattcaag	atatcattat	ttcctggagg	gttttttaga	1260
tgcactacta tgtggaaata	gctctgatgc	aggccaatgt	ccagagggat	atatgtgtgt	1320
gaaagctggt agaaatccca	attatggcta	cacaagcttt	gataccttca	gttgggcttt	1380
tttgtccttg tttcgactaa	ı tgactcagga	cttctgggaa	aatctttatc	aactgacatt	1440
acgtgctgct gggaaaacgt	acatgatatt	ttttgtattg	gtcattttct	tgggctcatt	1500
ctacctaata aatttgatco	: tggctgtggt	ggccatggcc	tacgaggaac	agaatcaggc	1560
caccttggaa gaagcagaad	: agaaagaggc	cgaatttcag	cagatgattg	aacagcttaa	1620
aaagcaacag gaggcagcto	: agcaggcagc	aacggcaact	gcctcagaac	attccagaga	1680
gcccagtgca gcaggcaggo	: tctcagacag	ctcatctgaa	gcctctaagt	tgagttccaa	1740
gagtgctaag gaaagaagaa	atcggaggaa	gaaaagaaaa	cagaaagagc	agtctggtgg	1800
ggaagagaaa gatgaggatg	, aattccaaaa	atctgaatct	gaggacagca	tcaggaggaa	1860
aggttttcgc ttctccattc	aagggaaccg	attgacatat	gaaaagaggt	actcctcccc	1920
acaccagtct ttgttgagca	tccgtggctc	cctattttca	ccaaggcgaa	atagcagaac	1980
aagccttttc agctttagag	ggcgagcaaa	ggatgtggga	tctgagaacg	acttcgcaga	2040
tgatgagcca gcacctttga	ggataacgag	agccgtagag	attccttgtt	tgtgccccga	2100
cgacacggag agagacgcaa	cagcaacctg	agtcagacca	gtaggtcatc	ccggatgctg	2160
gcagtgtttc cagcgaatgo	gaagatgcac	agcactgtgg	attgcaatgg	tgtggtttcc	2220
ttggttggtg gaccttcagt	tcctacatcg	cctgttggac	agcttctgcc	agaggtgata	2280
atagataagc cagctactga	ı tgacaatgga	acaaccactg	aaactgaaat	gagaaagaga	2340
aggtcaagtt ctttccacgt	ttccatggac	tttctagaag	atccttccca	aaggcaacga	2400
gcaatgagta tagccagcat	tctaacaaat	acagtagaag	aacttgaaga	atccaggcag	2460

aaatgcccac	cctgttggta	taaattttcc	aacatattct	taatctggga	ctgttctcca	2520
tattggttaa	aagtgaaaca	tgttgtcaac	ctggttgtga	tggacccatt	tgttgacctg	2580
gccatcacca	tctgtattgt	cttaaatact	cttttcatgg	ccatggagca	ctatccaatg	2640
acggaccatt	tcaataatgt	gcttacagta	ggaaacttgg	ttttcactgg	gatctttaca	2700
gcagaaatgt	ttctgaaaat	tattgccatg	gatccttact	attatttcca	agaaggctgg	2760
aatatctttg	acggttttat	tgtgacgctt	agcctggtag	aacttggact	cgccaatgtg	2820
gaaggattat	ctgttctccg	ttcatttcga	ttgctgcgag	ttttcaagtt	ggcaaaatct	2880
tggccaacgt	taaatatgct	aataaagatc	atcggcaatt	ccgtgggggc	tctgggaaat	2940
ttaaccctcg	tcttggccat	catcgtcttc	atttttgccg	tggtcggcat	gcagctcttt	3000
ggtaaaagct	acaaagattg	tgtctgcaag	atcgccagtg	attgtcaact	cccacgctgg	3060
cacatgaatg	acttcttcca	ctccttcctg	attgtgttcc	gcgtgctgtg	tggggagtgg	3120
atagagacca	tgtgggactg	tatggaggtt	gctggtcaag	ccatgtgcct	tactgtcttc	3180
atgatggtca	tggtgattgg	aaacctagtg	gtcctgaatc	tctttctggc	cttgcttctg	3240
agctcattta	gtgcagacaa	ccttgcagcc	actgatgatg	ataatgaaat	gaataatctc	3300
caaattgctg	tggataggat	gcacaaagga	gtagcttatg	tgaaaagaaa	aatatatgaa	3360
tttattcaac	agtccttcat	taggaaacaa	aagattttag	atgaaattaa	accacttgat	3420
gatctaaaca	acaagaaaga	cagttgtatg	tccaatcata	cagcagaaat	tgggaaagat	3480
cttgactatc	ttaaagatgt	aaatggaact	acaagtggta	taggaactgg	cagcagtgtt	3540
gaaaaataca	ttattgatga	aagtgattac	atgtcattca	taaacaaccc	cagtcttact	3600
gtgactgtac	caattgctgt	aggagaatct	gactttgaaa	atttaaacac	ggaagacttt	3660
agtagtgaat	cggatctgga	agaaagcaaa	gagaaactga	atgaaagcag	tagctcatca	3720
gaaggtagca	ctgtggacat	cggcgcacct	gtagaagaac	agcccgtagt	ggaacctgaa	3780
gaaactcttg	aaccagaagc	ttgtttcact	gaaggctgtg	tacaaagatt	caagtgttgt	3840
caaatcaatg	tggaagaagg	cagaggaaaa	caatggtgga	acctgagaag	gacgtgtttc	3900
cgaatagttg	aacataactg	gtttgagacc	ttcattgttt	tcatgattct	ccttagtagt	3960
ggtgctctgg	catttgaaga	tatatatatt	gatcagcgaa	agacgattaa	gacgatgttg	4020
gaatatgctg	acaaggtttt	cacttacatt	ttcattctgg	aaatgcttct	aaaatgggtg	4080
gcatatggct	atcaaaatat	ttcaccaatg	cctggtgttg	gctggacttc	ttaattgttg	4140

atgtttcatt ggtcagttta	a acagcaaatg	ccttgggtta	ctcagaactt	ggagccatca	4200
aatctctcag gacactaaga	a gctctgagac	ctctaagagc	cttatctcga	tttgaaggga	4260
tgagggtggt tgtgaatgco	c cttttaggag	caattccatc	catcatgaat	gtgcttctgg	4320
tttgtcttat attctggcta	a attttcagca	tcatgggcgt	aaatttgttt	gctggcaaat	4380
tctaccactg tattaacacc	c acaactggtg	acaggtttga	catcgaagac	gtgaataatc	4440
atactgattg cctaaaacta	a atagaaagaa	atgagactgc	tcgatggaaa	aatgtgaaag	4500
taaactttga taatgtagga	a tttgggtatc	tctctttgct	tcaagttgcc	acattcaaag	4560
gatggatgga tataatgtat	gcagcagttg	attccagaaa	tgtggaactc	cagcctaagt	4620
atgaagaaag tetgtacat	g tatctttact	ttgttatttt	catcatcttt	gggtccttct	4680
tcaccttgaa cctgtttatt	ggtgtcatca	tagataattt	caaccagcag	aaaaagaagt	4740
ttggaggtca agacatcttt	atgacagaag	aacagaagaa	atactataat	gcaatgaaaa	4800
aattaggatc gaaaaaacco	g caaaagccta	tacctcgacc	aggaaacaaa	tttcaaggaa	4860
tggtctttga cttcgtaaco	c agacaagttt	ttgacataag	catcatgatt	ctcatctgtc	4920
ttaacatggt cacaatgatç	g gtggaaacag	atgaccagag	tgaatatgtg	actaccattt	4980
tgtcacgcat caatctggto	g ttcattgtgc	tatttactgg	agagtgtgta	ctgaaactca	5040
tctctctacg ccattattat	tttaccattg	gatggaatat	ttttgatttt	gtggttgtca	5100
ttctctccat tgtaggtato	g tttcttgccg	agctgataga	aaagtatttc	gtgtccccta	5160
ccctgttccg agtgatccgt	cttgctagga	ttggccgaat	cctacgtctg	atcaaaggag	5220
caaaggggat ccgcacg					